# GEE BEE

**PART NO.**
**420-0199**

MANUFACTURED BY

Gremlin®
Industries, inc.

# OWNER'S MANUAL

# GEE BEE

# OPERATING INSTRUCTIONS

# AND

# SERVICE MANUAL

GEE BEE OWNER'S MANUAL

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# INTRODUCTION

This is an electronic game that makes extensive use of digital integrated circuitry and television monitor circuitry. This manual assumes the maintenance technician possesses a general knowledge of solid state circuitry, microprocessor, TTL digital integrated circuitry and T.V. monitor concepts. Any individual NOT knowledgeable in these areas SHOULD NOT attempt repair of the electronic portion of this game. IT SHOULD BE NOTED THAT ANY ATTEMPT TO REPAIR THE GAME IN THE FIELD WITHOUT EXPRESS CONSENT OF THE FACTORY WILL IMMEDIATELY VOID THE WARRANTY!!!

IMPORTANT NOTES:

| | |
|---|---|
| NEVER | replace any components with anything other than exact replacement parts. (See Parts List located on Service Schematics. |
| NEVER | remove circuit boards/connections while power is on. |
| DO NOT | replace the fuse with anything other than the proper value. A blown fuse indicates an overload condition within the game. Replacing the fuse with a higher value can cause severe damage to internal components if an overload occurs. |
| ALWAYS | consult the manual before attempting repairs. |

CORRESPONDENCE regarding this game should be addressed to:

GREMLIN INDUSTRIES, INC.

8401 Aero Drive

San Diego, California 92123

(714) 277-8700

## IMPORTANT NOTE

An important service note is posted in this game and is repeated here for emphasis:

IF AT ANY TIME THE T. V. SCREEN SHOWS A MEANINGLESS DISPLAY

OR THE GAME OTHERWISE MALFUNCTIONS, SIMPLY DROP A COIN INTO

THE COIN MECHANISM. THIS SHOULD CORRECT THE PROBLEM. IF

NOT, THE GAME REQUIRES SERVICE.

The circuitry in this game has been arranged so that the insertion of a quarter through the coin mechanism will reset the system.
This clears up temporary problems caused by power line disturbances, static, etc.

SERVICE TECHNICIAN NOTE:

The system reset circuitry described above requires that the coin counter is attached to the system. If there is a coin counter problem and no replacement is available, the game will function properly if a 10K Ohm resistor is connected across the coin counter input pins to the video logic board.

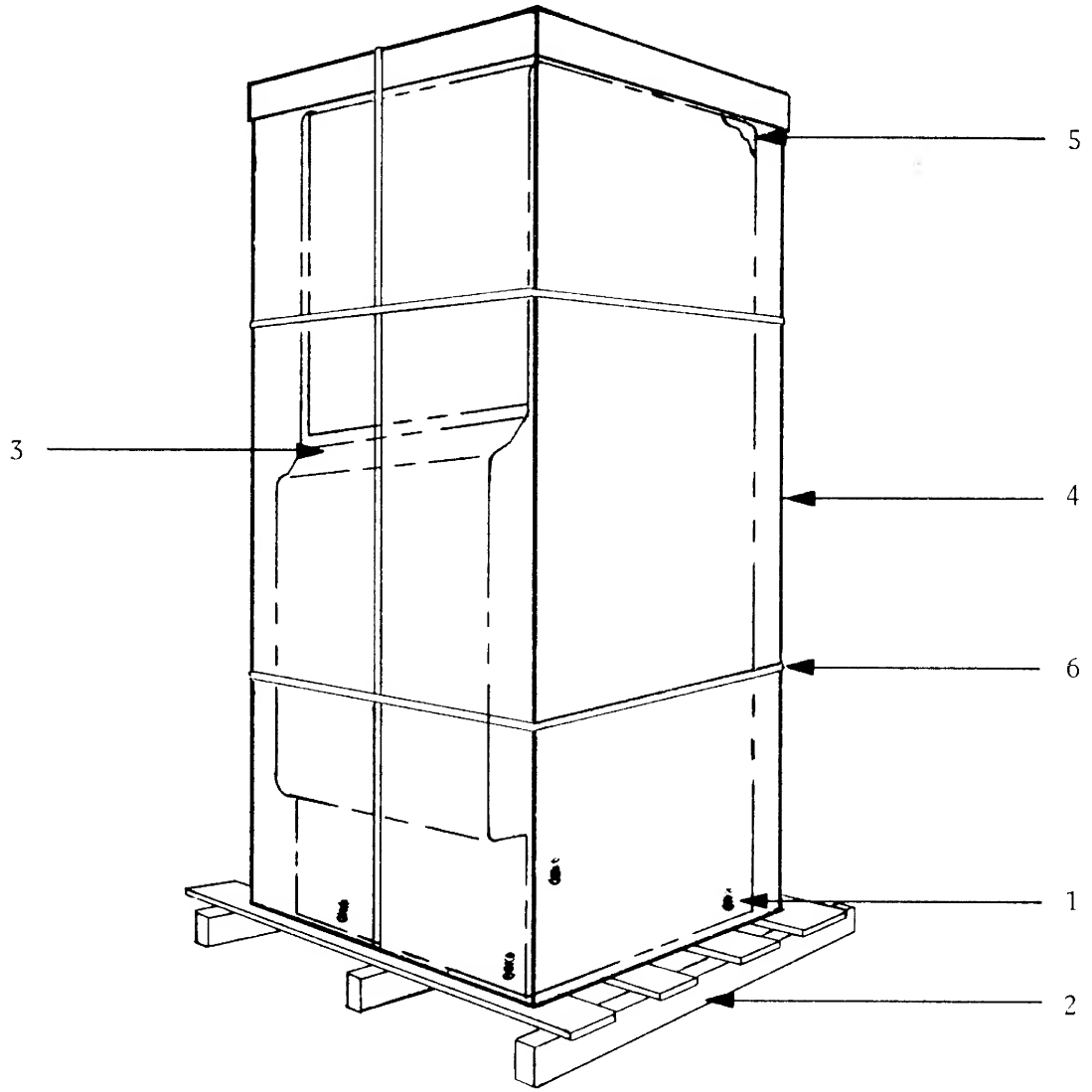
## REPACKAGING INSTRUCTIONS

Should it be necessary to ship this game, follow the instructions below for game recrating:

A) If the original shipping bolts have been discarded (Ref.1), obtain four 5/16-18x1 3/4" hex head bolts with 5/16" flat washers. Carefully lay the game on its side and attach skid (Ref.2).

B) Place game upright. Tape game keys to upper flange of operator's panel (Ref.3). Crate the game using appropriate shock-absorbent packing material (Ref.4). Include padding on all four corners of the game (Ref.5). After crating is completed, secure package with strapping (Ref.6).

NOTE: If the game is to be shipped to GREMLIN for service or repair, attach a tag identifying the distributor and indicate the service or repair to be made; include the full serial number of the game. GAME MUST BE SHIPPED PREPAID.



# REPLACEMENT PARTS LIST- GEE BEE

## 1. LOGIC BOARD PARTS

| GREMLIN PART NUMBER | DESCRIPTION |
|---|---|
| 211-0050 | 44 PIN EDGE CONNECTOR |
| 230-0023 | CRYSTAL, 18.432 MHZ |
| 313-0002 | LM311N IC |
| 313-0003 | LM340 T5 7805(+5 VOLT REGULATOR) |
| 313-0006 | LM380 |
| 313-0014 | LM340 T12 (+12 VOLT REGULATOR) |
| 313-0023 | LM320 T5 (-5 VOLT REGULATOR) |
| 315-0018 | 2111 RAM IC |
| 315-0019 | EPROM 2708 IC |
| 315-0046 | 2114/2114L RAM IC |
| 316-0137 | PROM IC 2332 |
| 510-0043 | 6 POSITION DIP SLIDE SWITCH |
| 530-0008 | HEATSINK |

## 2. POWER SUPPLY

| | |
|---|---|
| 211-0042 | CONNECTOR SOCKET |
| 211-0045 | CONNECTOR PLUG |
| 560-0003 | TRASNFORMER, GAME |

## 3. CONTROL PANEL

| | |
|---|---|
| 250-0068 | BRACKET (FOR VOLUME CONTROL) |
| 250-0328 | BEZEL FOR SERVE SWITCH, TAPERED |
| 240-0092 | KNOB FOR PADDLE CONTROL |
| 475-0007 | 10K POT, VOLUME CONTROL |
| 475-0016 | 5K POT, PADDLE CONTROL |
| 510-0014 | SLIDE SWITCH (ON BRACKET W/VOLUME) |
| 510-0045 | SERVE SWITCH, ILLUMINATED (W/BULB) |
| 510-0046 | PLAYER 1 START SWITCH (W/ BULB) LEFT |
| 510-0047 | PLAYER 2 START SWITCH (W/ BULB) RIGHT |

## 4. COIN MECHANISM

| | |
|---|---|
| 220-0071 | COIN REJECT BUTTON W/ SPRING |
| 220-0072 | COIN RETURN STOP (U-BOLT W/NUTS) |
| 220-0074 | COIN MECHANSIM W/LOCKOUT COIL (U.S.B.) |
| | COIN LOCKOUT COIL |

5. MISCELLANEOUS PARTS

| | |
|---|---|
| 130-0001 | GAME SPEAKER |
| 200-0009 | WELLS GARDNER MONITOR B/W |
| 220-0035 | CABINET LOCK |
| 420-0158 | MANUAL, WELLS GARDNER MONITOR |
| 420-0199 | MANUAL, GEE BEE GAME |

# GEE BEE TRANSFORMER VOLTAGE CONVERSION

TO CONVERT THE GAME TRANSFORMER (PART NO. 560-0003) TO 100, 115, OR 230 VAC, REFER TO THE FOLLOWING CHART:

FOR 100 VOLTS: CONNECT THE VOLTAGE INPUT LINES TO PINS 1 AND 2 ON THE XFMR.

FOR 115 VOLTS: CONNECT THE VOLTAGE INPUT LINES TO PINS 1 AND 3.

FOR 230 VOLTS: CONNECT THE VOLTAGE INPUT LINES TO PINS 1 AND 4, WITH PIN 3 CONNECTED TO THE LAMP CIRCUIT.

GAME CONCEPT:

GEE BEE is a unique one or two player ball and paddle video game. By controlling a set of paddles, players keep a ball bouncing around the screen to knock out point blocks for high score. There are also bumpers, rollovers and a spinner to aim for, all worth more points. The game accepts up to 9 credits, and each game plays either 3 or 5 balls, depending on which option is set.

GAME START:

When one credit is accepted, the screen displays the number, and only the one-player start button flashes. When two or more credits (up to 9) are displayed, both the one- and two- player start buttons flash. The game is adjustable for the number of coins per credit. (See Adjustments and Options)

GAME PLAY:

If the one-player start button is pushed, the credits count down one; when the two-player button is pushed, the credits decrease by two. Then, the SERVE button flashes and, when pushed, releases the ball onto the playfield. The ball automatically appears after 10 seconds if the serve button is not pushed.

For two-players, GEE BEE features alternate play; that is, when the first player's turn is over, the game resets to allow player two to take his turn. As the alternate action continues, the game remembers each player's score.

The paddle knob causes both paddles to move to the left and right across the screen. The ball bounces off the top side of both paddles, but passes through the upper paddle's bottom side. The ball speed varies, depending on the number of hits made for that turn. When first served, the ball moves at slow speed, then changes to medium speed after the 4th hit with the paddles. On the 8th hit, the ball speed becomes fast. When the high speed ball passes through the spinner, its speed changes to slow, then to medium after the first hit.

SCORING:

There are three kinds of point blocks- top blocks, side blocks, and pocket blocks. When the ball hits a block, that block is erased and the points are added to the score. The point values for the blocks are as follows:

TOP BLOCKS AND LEFT AND RIGHT SIDE BLOCKS:

| | |
|---|---|
| Row A (outermost row) | 1 block = 20 points/1 Bonus (1000 points) for erasing one row. |
| Row B | 1 block = 50 points/1 Bonus (1000 points) for erasing one row. |
| Row C | 1 block - 100 points/1 Bonus (1000 points) for erasing one row. |

The points for the left and right pocket blocks are 100, 300, 500, 700, and 900 points, respectively, starting from the bottom of the pocket.

GEE BEE has two bumpers at the top of the screen, which give 10 points when hit. They enlarge momentarily when hit, then return to normal size. When one bank of side blocks is erased, the bumper on that side increases to 100 points. There is also a spinner between the bumpers, which gives points depending on how many times it spins. At slow ball speed, the spinner turns twice; at medium speed, it spins 4 times; and, at fast speed, it spins 6 times. The spinner is normally gray in color, but changes to white when all the top blocks are erased. One revolution is worth 10 points when the spinner is gray, and worth 100 points when it is white.

Five rollovers (circled G's) appear at the bottom of the screen, and are colored gray normally. Each circle changes from gray to white, or white to gray, when a ball passes through it. The change from gray to white is worth 50 points. If all 5 rollovers change to white, the bonus multiplier display becomes X2, and doubles the score for that turn. No further changes occur after all rollovers become white in one turn.

GEE BEE provides a safety gate to prevent the ball from leaving the playfield through either the left or right side exits. The left or right safety gate comes on when all the left or right side blocks, respectively, are knocked out. When the ball hits the safety gate once, the ball rebounds, the safety gate disappears and 500 points plus 1 bonus (1000 points) are added to the score. If the ball leaves the playfield through one of the side exits (no safety gate) 500 points plus the bonus are added to the score.

SCORING (Continued)

Special features in the game include a chance for an extra ball if all left or right pocket blocks are erased. Then, a flashing "EXTRA BALL CHANCE" arrow appears in the playfield exit on the side with the empty pocket. If the ball leaves through the exit where the arrow is flashing, a "SAME PLAYER SHOOTS AGAIN" sign appears and one extra ball is awarded. If a safety gate is displayed in that exit, along with the extra ball signal, the ball is rebounded and an extra ball is awarded. Only one extra ball is given per turn. A free credit is given when all left AND right pocket blocks are erased. In addition, the game gives one free credit if the player's score exceeds a preselectable number. (See Adjustments and Options) The maximum score attainable is 999990; the maximum bonus points are 99000. Finally, GEE BEE produces a number of sounds that vary depending on whether the ball hits a wall, a block. or the paddles.

ADJUSTMENTS AND OPTIONS:

1. SELF TEST

GEE BEE has a built-in self test, which enables the owner to check the game for proper operation quickly. By turning on the slide switch inside the coin door, the game runs through the following test:

Self test switch ON:

1. The ball moves diagonally from the lower left corner to the upper right corner of the screen without disappearing. This indicates normal operation.

2. When the ball reaches the upper right corner, the screen displays the following information:

| | |
|---|---|
| OK or NG | For game OK, or NG for a malfunction. |
| 2A | Test value of paddle knob - these digits change successively when the paddle knob is turned to the left or right. With the paddles turned to the right, the display indicates a number between 0 and 16. Any number BELOW 10 means normal operation.<br><br>When the paddles are turned all the way to the left, the display counts 0...1...2... 3...4...5...6...7...8...9...A...B...C... D...E...F...10.... If the value is ABOVE A0, but BELOW FF, the game is functioning normally.* |
| U or T | Indicates whether the game is an upright or table model. |
| 3 or 5 | Indicates the number of serve balls per game. |
| A,B,C, or F | For charge per game (see Chart, following). |
| 04 | For replay points (see Chart, following). |

* A note on this numbering system: The values A-F represent the DECIMAL numbers 10-15. So, a display of A0 would be a higher value than, say, 70, 80, or 90, but LESS THAN B0, C0, D0, E0, or F0. In this numbering system (called HEXADECIMAL for 16 digits, 0-F, instead of 10 digits, 0-9, in decimal) the highest 2-digit number is FF.

ADJUSTMENTS AND OPTIONS (Continued)

3. If the serve button and the one- and two- player start buttons are lit during test, normal operation is indicated.

4. The game is functioning normally if the game sounds are heard when the serve button, the one- and two- player start buttons, and coin switch are each activated.

5. Turn the self-test switch OFF.

6. The lockout coil de-activates momentarily when the test switch is turned off. The coil re-activates instantly.

7. With the test switch off, the screen displays a cross-hatch pattern for about a second. If it is desired to use this pattern for monitor adjustments, simply turn the test switch on.

8. The game counter advances one step when the self-test is run once.

II. OTHER ADJUSTMENTS:

1. Volume control -- The volume can be adjusted with the control inside the coin door.

2. OPTIONS: (number of balls per game, game charge, and replay points)

The following is a chart of options for GEE BEE, all selectable by means of 6 small slide switches located on the logic board.

| OPTION | SWITCH POSITION 1 | 2 | 3 | 4 | 5 | 6 | SYMBOL | DETAILS |
|---|---|---|---|---|---|---|---|---|
| model type | on | | | | | | U | upright |
| | off | | | | | | T | table |
| number of serve balls | | on | | | | | 3 | 3 balls per game |
| | | off | | | | | 5 | 5 balls " " |
| game charge | | | on | on | | | A | 1 coin, 1 play |
| | | | off | on | | | B | 1 coin, 2 plays |
| | | | on | off | | | C | 2 coins, 1 play |
| | | | off | off | | | F | free game |
| credit level | | | | | | | | 1 credit up: 2 credits up: |
| | | on | | | on | on | 00 | |
| | | off | | | on | on | 00 | |
| | | on | | | off | on | 04 | 40000 80000 |
| | | off | | | off | on | 06 | 60000 120000 |
| | | on | | | on | off | 07 | 70000 140000 |
| | | off | | | on | off | 10 | 100000 200000 |
| | | on | | | off | off | 10 | 100000 200000 |
| | | off | | | off | off | 15 | 150000 300000 |

MAINTENANCE & TROUBLESHOOTING PROCEDURES:

Always check and confirm the following items when it is believed that trouble has occured.

1. Is the power switch on?
   Forgetting to turn on the power switch is a comparatively common oversight.

2. Is the fuse intact?
   One fuse is provided on the power supply board and on the monitor board. If a fuse blows out after being replaced, it indicates trouble in another component. Always replace with the prescribed capacity fuse, as normal equipment may be damaged if larger fuses are used as a substitute.

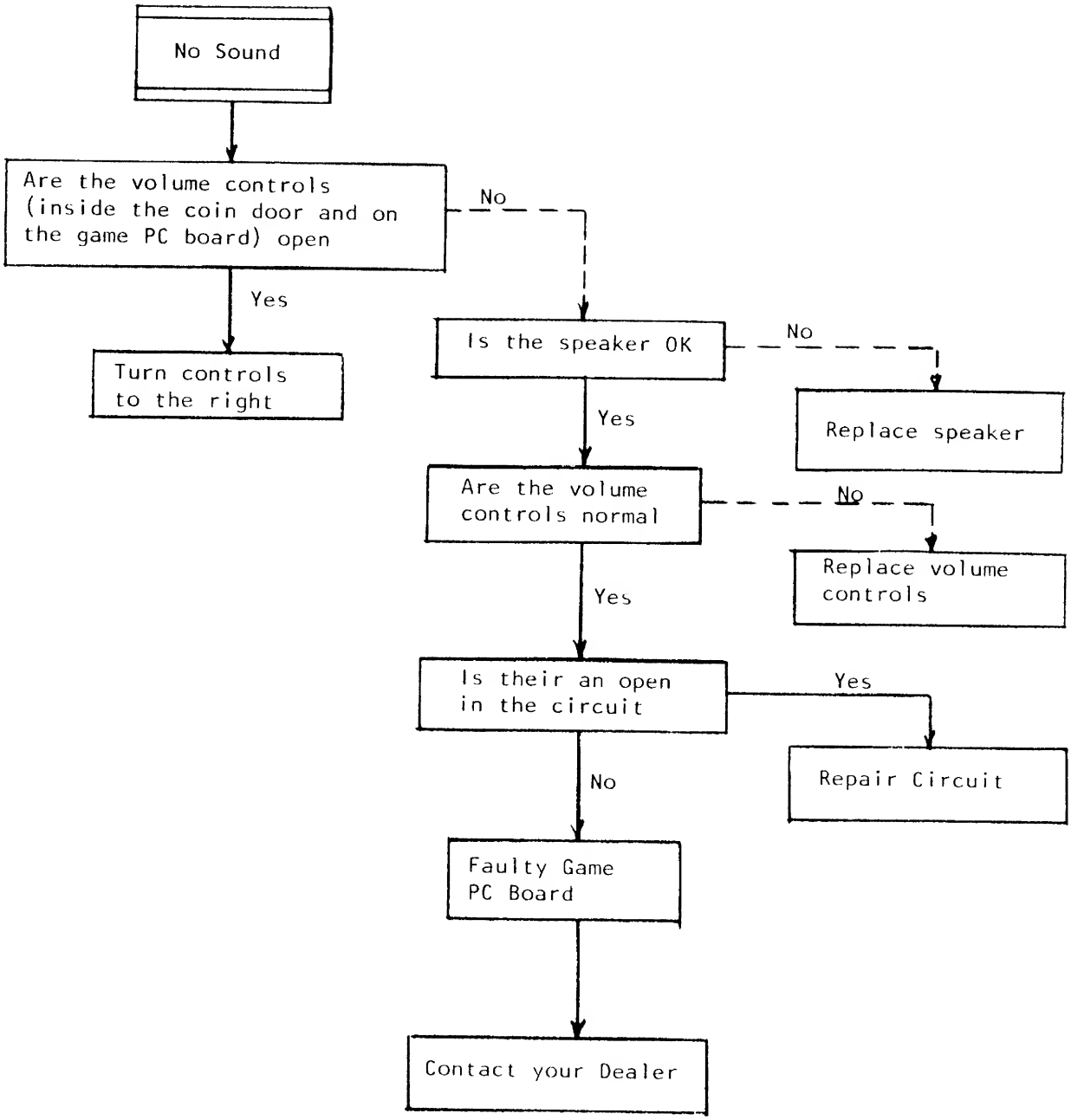
3. Are the connectors firmly inserted?
   Poor connector connections must be considered for any trouble indication. Check all related connectors for poor contact. Although disconnected connectors are easily spotted, poor contacts are difficult to locate. The connectors should therefore be pushed in firmly and then loosened to spot poor connections. When testing the PC board connectors, always turn off the power supply. Care should also be taken in relation to the power supply on the other connectors.

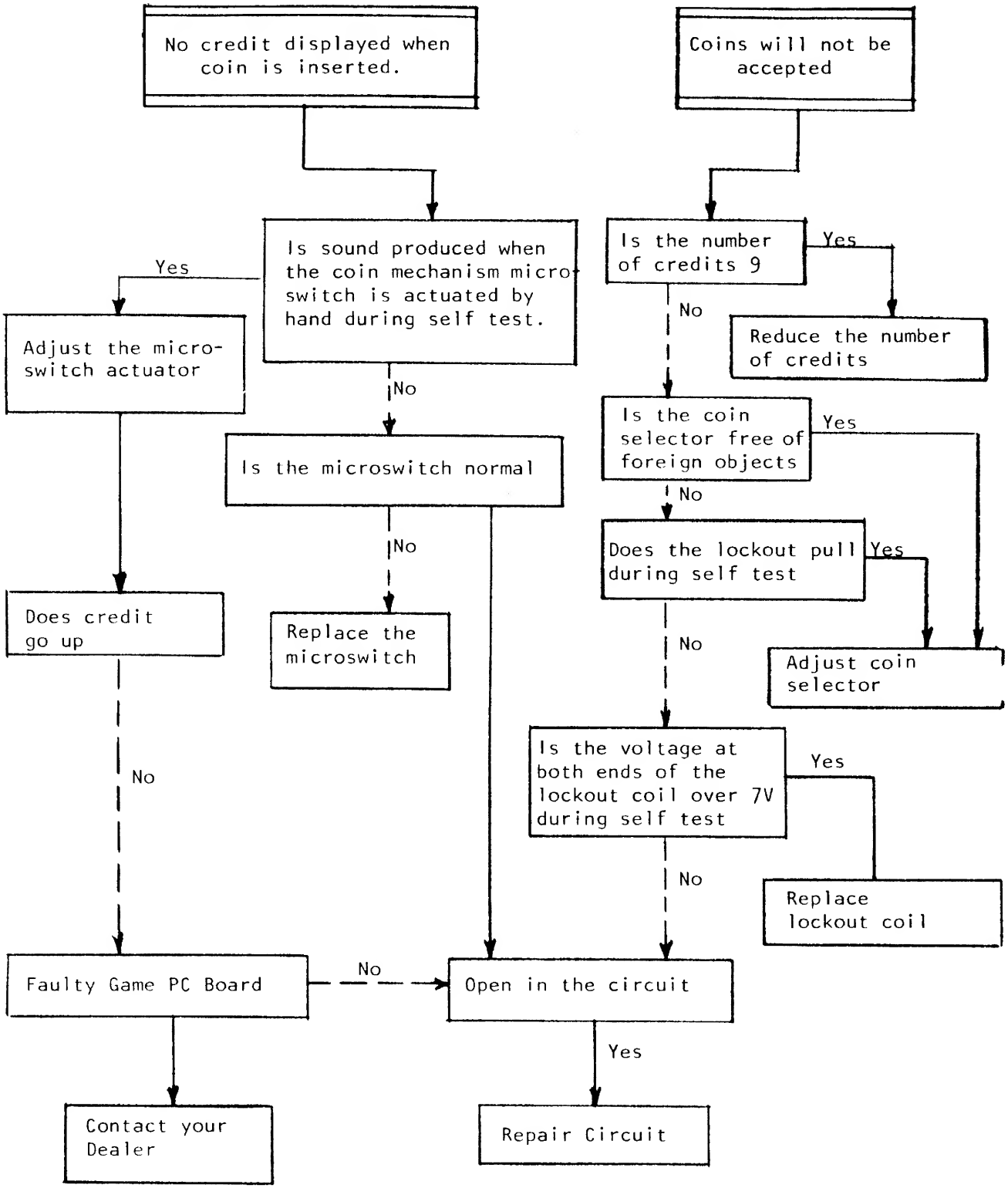
4. Turn power supply off and on again.
   As the unit may return to normal if the control circuit is reset when the game seems abnormal, turn the power off and on to see if the trouble will clear up.

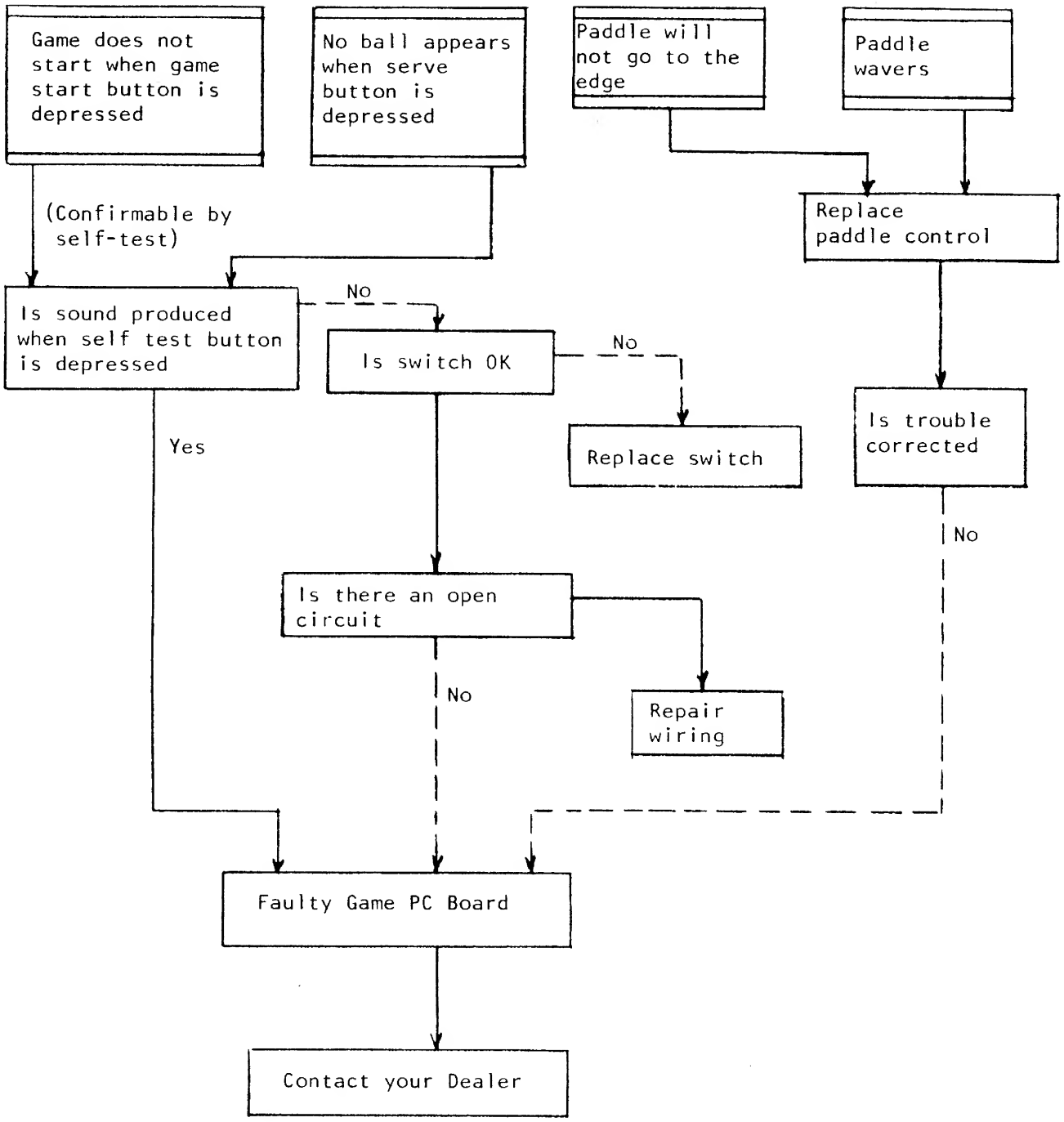
5. Are there any metallic objects on the PC board?
   Ensure that there are no metallic objects on the PC board, as this will be the cause of shorts. Also, refrain from putting any other objects inside the cabinet.

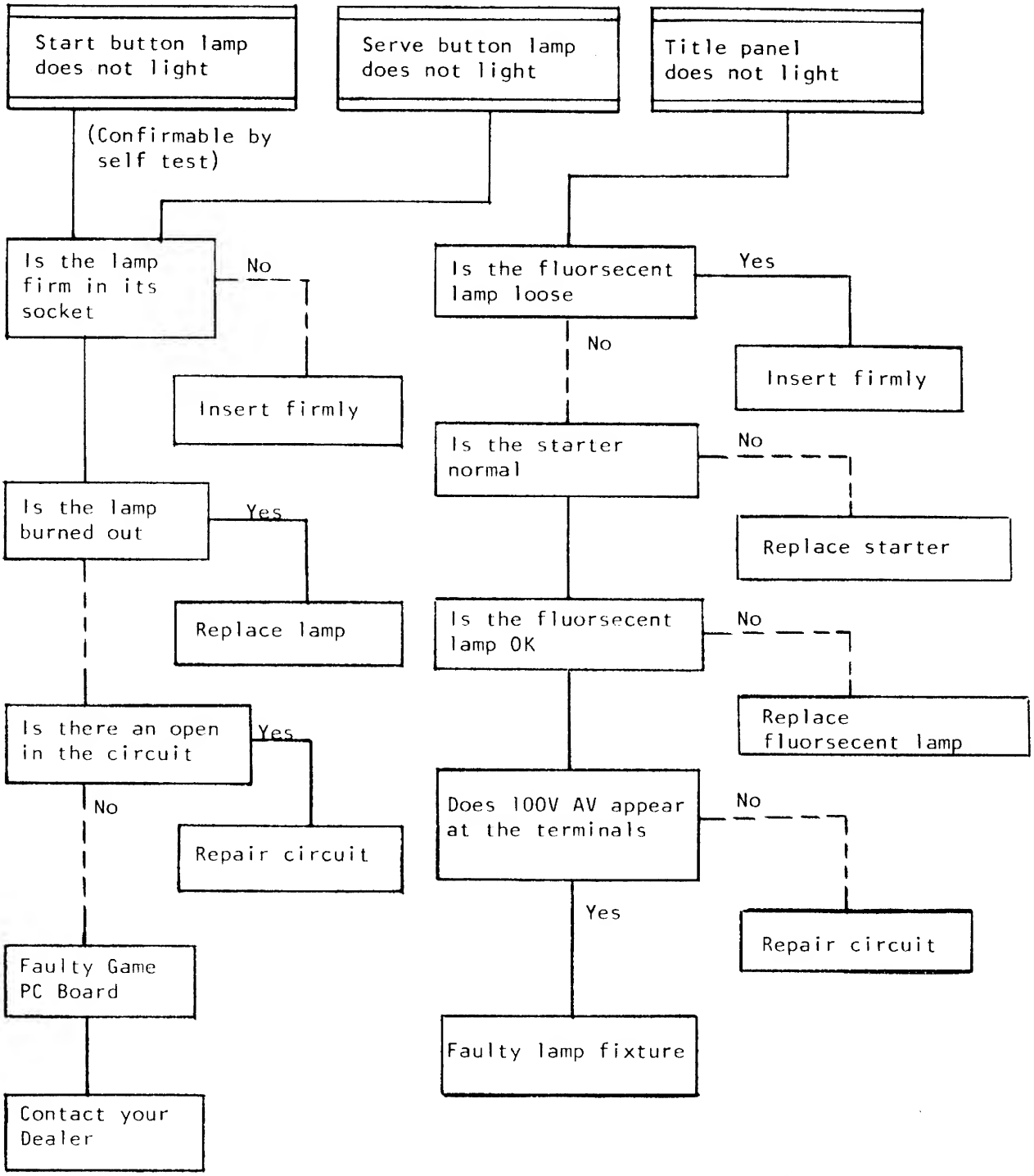
6. Care in circuit conductivity tests.
   When testing conductivity of the circuit with a tester, always disconnect PC board edge connector J2.

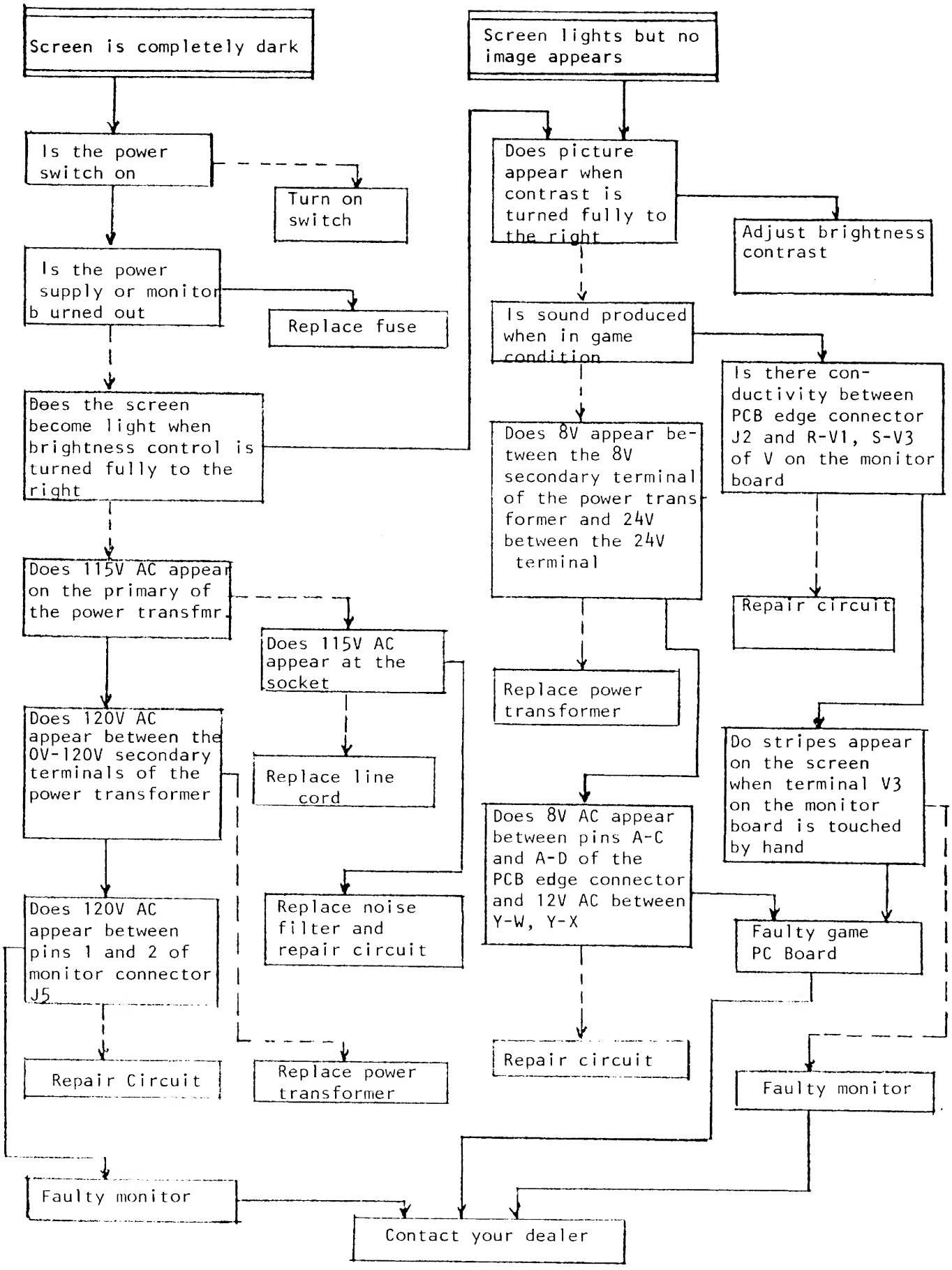
The following flow charts are printed here for a logical, step-by-step approach to trouble-shooting the game, should that be necessary.


No Sound
Are the volume controls (inside the coin door and on the game PC board) open
No
Yes
Turn controls to the right
Is the speaker OK
No
Replace speaker
Yes
Are the volume controls normal
No
Replace volume controls
Yes
Is their an open in the circuit
Yes
Repair Circuit
No
Faulty Game PC Board
Contact your Dealer


No credit displayed when coin is inserted.
Coins will not be accepted
Is sound produced when the coin mechanism micro switch is actuated by hand during self test.
Yes
No
Adjust the micro-switch actuator
Is the microswitch normal
No
Replace the microswitch
Does credit go up
No
Is the number of credits 9
Yes
No
Reduce the number of credits
Is the coin selector free of foreign objects
Yes
No
Does the lockout pull during self test
Yes
No
Adjust coin selector
Is the voltage at both ends of the lockout coil over 7V during self test
Yes
No
Replace lockout coil
Faulty Game PC Board
No
Open in the circuit
Yes
Contact your Dealer
Repair Circuit


Game does not start when game start button is depressed
No ball appears when serve button is depressed
Paddle will not go to the edge
Paddle wavers
(Confirmable by self-test)
Replace paddle control
Is sound produced when self test button is depressed
No
Is switch OK
No
Replace switch
Is trouble corrected
Yes
No
Is there an open circuit
No
Repair wiring
Faulty Game PC Board
Contact your Dealer


Start button lamp does not light
Serve button lamp does not light
Title panel does not light
(Confirmable by self test)
Is the lamp firm in its socket
No
Insert firmly
Is the lamp burned out
Yes
Replace lamp
Is there an open in the circuit
Yes
Repair circuit
No
Faulty Game PC Board
Contact your Dealer
Is the fluorsecent lamp loose
Yes
Insert firmly
No
Is the starter normal
No
Replace starter
Is the fluorsecent lamp OK
No
Replace fluorsecent lamp
Does 100V AV appear at the terminals
No
Repair circuit
Yes
Faulty lamp fixture


Screen is completely dark
Is the power switch on
Turn on switch
Is the power supply or monitor b urned out
Replace fuse
Does the screen become light when brightness control is turned fully to the right
Does 115V AC appear on the primary of the power transfmr
Does 115V AC appear at the socket
Replace line cord
Does 120V AC appear between the 0V-120V secondary terminals of the power transformer
Replace noise filter and repair circuit
Does 120V AC appear between pins 1 and 2 of monitor connector J5
Repair Circuit
Replace power transformer
Faulty monitor
Screen lights but no image appears
Does picture appear when contrast is turned fully to the right
Adjust brightness contrast
Is sound produced when in game condition
Is there conductivity between PCB edge connector J2 and R-V1, S-V3 of V on the monitor board
Repair circuit
Does 8V appear between the 8V secondary terminal of the power transformer and 24V between the 24V terminal
Replace power transformer
Do stripes appear on the screen when terminal V3 on the monitor board is touched by hand
Does 8V AC appear between pins A-C and A-D of the PCB edge connector and 12V AC between Y-W, Y-X
Faulty game PC Board
Repair circuit
Faulty monitor
Contact your dealer

| Gremlin Industries, Inc. San Diego, California 92123 | PARTS LIST | TITLE TOP ASSEMBLY GEE-BEE | 725-0002 DWG NO | SH 1 OF 9 | A REV |
|---|---|---|---|---|---|
| SEE FOUR 'D' SIZE SHTS | DRAWN G. LLOYD- | | ENGR | | |
| | CHECK [illegible] 1-22-79 | | APPR | | |

| LTR | DATE | REVISION DESCRIPTION | DRAFT | CHECK | APPR |
|---|---|---|---|---|---|
| A | 1-17-79 | INITIAL RELEASE | G. LLOYD | [illegible] | [illegible] |
| | | | | | |

FORM NO. 001-1500

| Gremlin Industries, Inc.<br>San Diego, California 92123 | PARTS LIST | TITLE<br>TOP ASSEMBLY GEE-BEE | 725-0002<br>DWG NO | SH 2<br>OF 9 | A<br>REV |
|---|---|---|---|---|---|

| ITEM NO | PART NO | QTY PER ASSY | DESCRIPTION | REF DES |
|---|---|---|---|---|
| 1 | 725-0002 | | TOP ASSY. GEE-BEE | |
| | | | | |
| 2 | 130-0001 | 1 | SPKR. GAME | |
| 3 | 130-0002 | 1 | SPKR. COVER | |
| 4 | 140-0021 | 1 | COVER J-BOX | |
| 5 | 140-0034 | 1 | CABINET GEE-BEE | |
| 6 | 200-0009 | 1 | MON VIDEO 23" | |
| 7 | 220-0035 | 1 | FORT LOCK | |
| 8 | 220-0074 | 2 | MECH COIN SINGLE | |
| 9 | 250-0048 | 1 | CLIP SWITCH | |
| 10 | 250-0285 | 1 | FR. CASH DR MOD. | |
| 11 | 250-0318 | 2 | BRKT ANGLE CRT | |
| 12 | 250-0319 | 1 | BRKT FRONT CRT. | |
| 13 | 250-0320 | 1 | BRKT REAR CRT | |
| 14 | 250-0321 | 2 | BRKT SIDE CRT | |
| 15 | 250-0322 | 2 | BRKT PLAY FIELD | |
| 16 | 250-0323 | 1 | BRKT SCORE | |
| 17 | 250-0324 | 1 | BRKT RET PLEXI | |
| 18 | 250-0325 | 2 | BRKT CONTROL PNL. | |
| 19 | 252-0059 | 2 | BRKT SPACER. | |
| 20 | 253-0097 | 1 | LOGO PNL | |
| 21 | 253-0098 | 1 | MONITOR PNL | |
| 22 | 253-0099 | 1 | PNL PLAYFIELD. | |
| 23 | 250-0330 | 2 | BRKT RETAINER LOGO | |

| Gremlin Industries, Inc. San Diego, California 92123 | PARTS LIST | TITLE TOP ASSEMBLY GEE-BEE | 725-0002 DWG NO | SH 3 OF 9 | A REV |
|---|---|---|---|---|---|

| ITEM NO | PART NO | QTY PER ASSY | | | | | DESCRIPTION | REF DES |
|---|---|---|---|---|---|---|---|---|
| 25 | 280-0005 | 10 | | | | | CABLE TIE | |
| 26 | 280-0010 | 6 | | | | | NUT WIRE | |
| 27 | 220-0008 | 1 | | | | | COUNTER DIGITAL | |
| 28 | 390-0011 | 1 | | | | | LAMP FLOR 18" | |
| 29 | 390-0012 | 1 | | | | | LAMP FIX FLOR 18" | |
| 30 | 420-0028 | 1 | | | | | DECAL S/N | |
| 31 | 420-0030 | 1 | | | | | DECAL CAUTION 115V | |
| 32 | 420-0038 | 2 | | | | | DECAL IMPORTANT NOTICE | |
| 33 | 420-0040 | 1 | | | | | DECAL RECYCLE | |
| 34 | 420-0041 | 1 | | | | | DECAL S/N SMALL | |
| 35 | 420-0060 | 1 | | | | | DECAL TIP N TELL | |
| 36 | 420-0071 | 1 | | | | | INST UNCRATING. | |
| 37 | 420-0208 | 1 | | | | | WRAP AROUND SIDE | |
| 38 | 420-0209 | 1 | | | | | TOP COVER. | |
| 39 | 420-0124 | 4 | | | | | CORNER STRIP. | |
| 40 | 420-0198 | 1 | | | | | SHADOW MASK. | |
| 41 | 420-0199 | 1 | | | | | MANUAL GEE-BEE | |
| 42 | 420-0200 | 1 | | | | | DECAL CARTON GEE-BEE | |
| 43 | 420-0201 | 1 | | | | | GRAPHIC SIDE LEFT | |
| 44 | 420-0202 | 1 | | | | | GRAPHIC SIDE RIGHT | |
| 45 | 420-0207 | 1 | | | | | DECAL SCORE | |
| 46 | 420-0158 | 1 | | | | | MANUAL W.G. 23 INCH | |
| 47 | 250-0326 | 1 | | | | | PLATE MTG XFMR. | |
| 48 | | | | | | | | |
| 49 | 807-0009 | 1 | | | | | ASSY JUNCTION BOX. | |

| Gremlin Industries, Inc. San Diego, California 92123 | PARTS LIST | TITLE TOP ASSEMBLY GEE-BEE | 725-0002 DWG NO | SH 4 OF 9 | A REV |
|---|---|---|---|---|---|

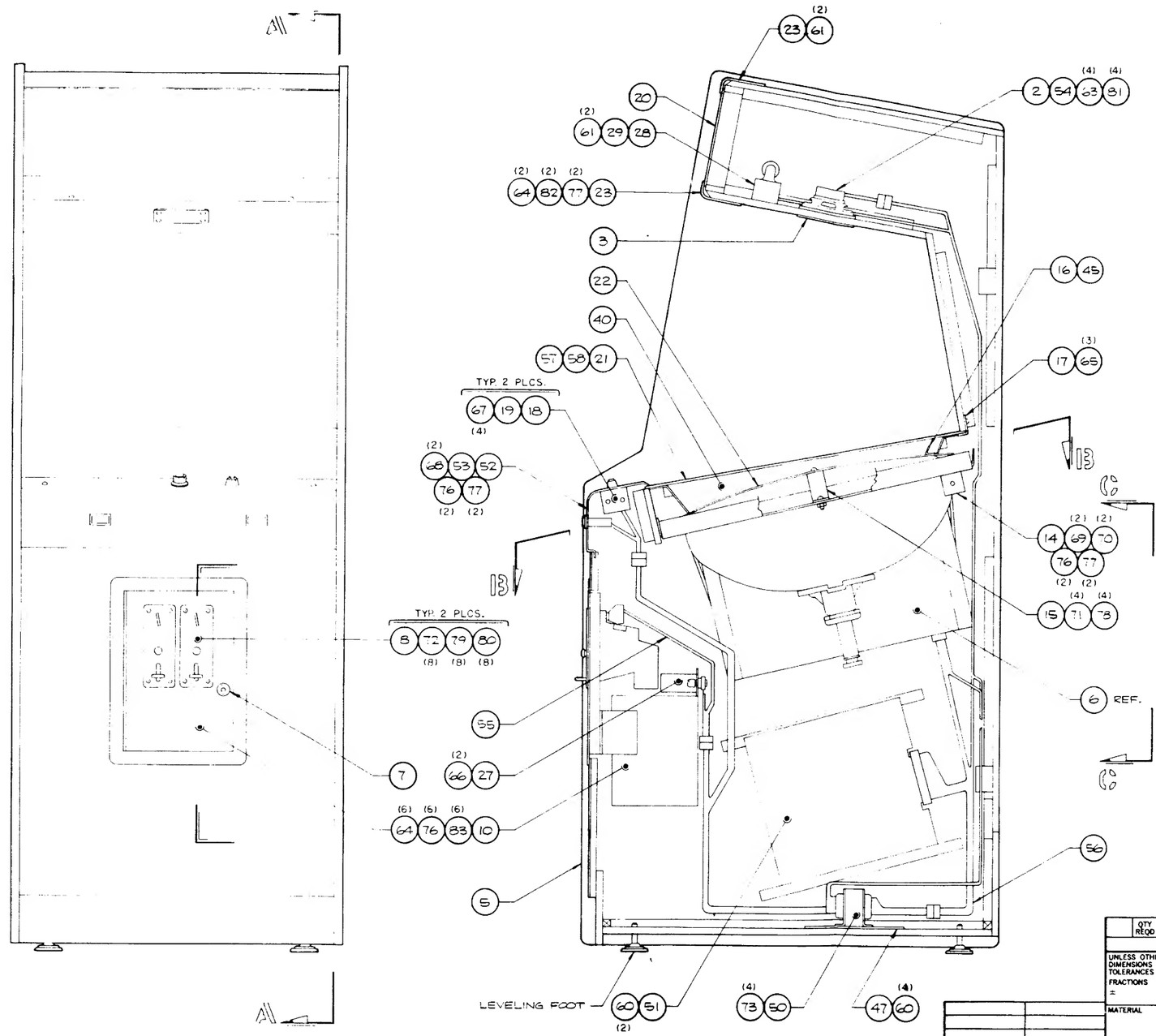
| ITEM NO | PART NO | QTY PER ASSY | DESCRIPTION | REF DES |
|---|---|---|---|---|
| 50 | 825-0007 | 1 | ASSEMBLY XFMR. | |
| 51 | 825-0001 | 1 | VIEDO LOGIC | |
| 52 | 825-0002 | 1 | CONTROL PNL | |
| 53 | 825-0003 | 1 | HARNESS CONTROL PNL | |
| 54 | 825-0004 | 1 | HARNESS SPEAKER | |
| 55 | 825-0005 | 1 | HARNESS COIN MECH | |
| 56 | 825-0006 | 1 | HARNESS, MAIN | |
| 57 | 420-0204 | 1 | COIN DECAL | |
| 58 | 420-0205 | 1 | PLAYER DECAL | |
| 59 | | 4 | SCR. 1/4-20 x 1/2 HEX HD | |
| 60 | | 8 | SCREW # 6 x 1/2 PAN HD XREC SHT MTL. | |
| 61 | | 6 | SCREW # 10 x 1/2 PAN HD XREC SHT MTL. | |
| 62 | | 4 | SCR. 10-24 x 1 PAN HD XREC | |
| 63 | | 4 | SCR. 8-32 x 1 1/2 RND. HD XREC BLK OXIDE | |
| 64 | | 8 | SCR. 10-24 x 1 1/2 CARRIAGE | |
| 65 | | 3 | SCREW # 6 x 3/8 PAN HD XREC. SHT MTL. | |
| 66 | | 2 | SCR. 6-32 x 3/8 PAN HD XREC | |
| 67 | | 4 | SCREW # 10 x 3/4 PAN HD XREC SHT MTL. | |
| 68 | | 2 | SCR 10-24 x 1 CARRIAGE | |
| 69 | | 2 | SCR. 1/4-20 x 3/8 PAN HD XREC. | |
| 70 | | 2 | SCR. 10-24 x 1/2 PAN HD XREC | |
| 71 | | 4 | SCR 6-32 x 1/2 PAN HD XREC | |
| 72 | | 8 | SCR 6-32 x 1/2 TRUSS HD TAMPER PROOF | |
| 73 | | 4 | RIVET, POP 3/16 DIA. x 1/2 | |
| 74 | | 4 | NUT-HEX 1/4-20 | |

| Gremlin Industries, Inc. San Diego, California 92123 | PARTS LIST | TITLE TOP ASSEMBLY GEE-BEE | 725-0002 DWG NO | SH 5 OF 9 | A REV |
|---|---|---|---|---|---|

| ITEM NO | PART NO | QTY PER ASSY | DESCRIPTION | REF DES |
|---|---|---|---|---|
| 75 | | 4 | WASHER SPLIT LOCK 1/4 | |
| 76 | | 14 | NUT HEX 10-24 | |
| 77 | | 10 | WASHER FLAT #10 | |
| 78 | | 4 | WASHER FLAT # 6 | |
| 79 | | 8 | NUT HEX 6-32 | |
| 80 | | 8 | WASHER SPLIT LOCK #6 | |
| 81 | | 4 | NUT HEX 8-32 | |
| 82 | | 2 | NUT WING 10-24 | |
| 83 | | 6 | WASHER SPLIT LOCK #10 | |

FORM NO. 001-1501

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | LTR | DESCRIPTION | DATE | APPROVED |
| | A | INITIAL RELEASE | 1-9-79 | |




SECTION A1 - A1

| QTY REQD | CODE IDENT | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | | | |

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

NEXT ASSY | USED ON

APPLICATION

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN S. LOVD | 1-11-79 |
| CHECKED | 1-12-79 |

**Gremlin Industries, Inc.**
San Diego, California 92123

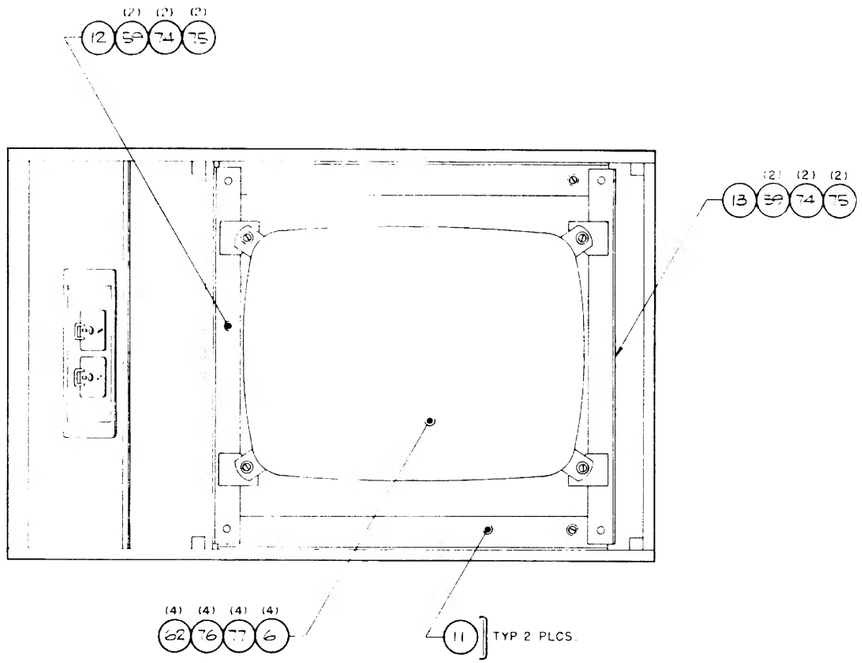
TOP ASSEMBLY SEE-BEE

| SIZE | CODE IDENT NO. | DRAWING NO. | REV. |
|---|---|---|---|
| D | | 725-0002 | A |

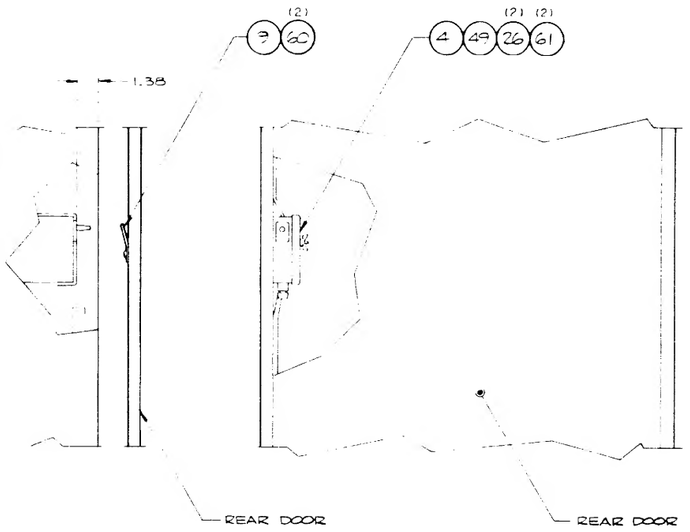
SCALE 1/4 SHEET 6 OF 9

725-0002 A

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | LTR | DESCRIPTION | DATE | APPROVED |
| | A | INITIAL RELEASE | 1-9-79 | |




SECTION 13 - 13




VIEW C - C

| QTY REQD | CODE IDENT | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | | | PARTS LIST |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN G. LLOYD | 1-16-79 |
| CHECKED | 1-22-79 |

**Gremlin Industries, Inc.**
San Diego, California 92123

TOP ASSEMBLY GEE-BEE

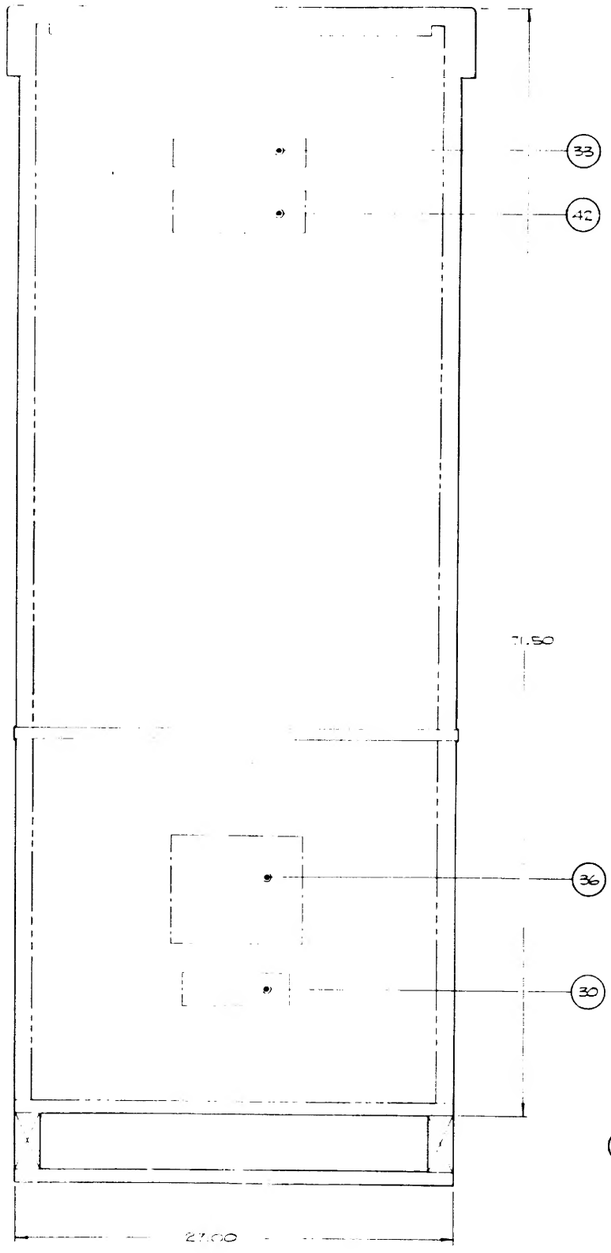
| SIZE | CODE IDENT NO. | DRAWING NO. | REV. |
|---|---|---|---|
| D | | 725-0002 | A |

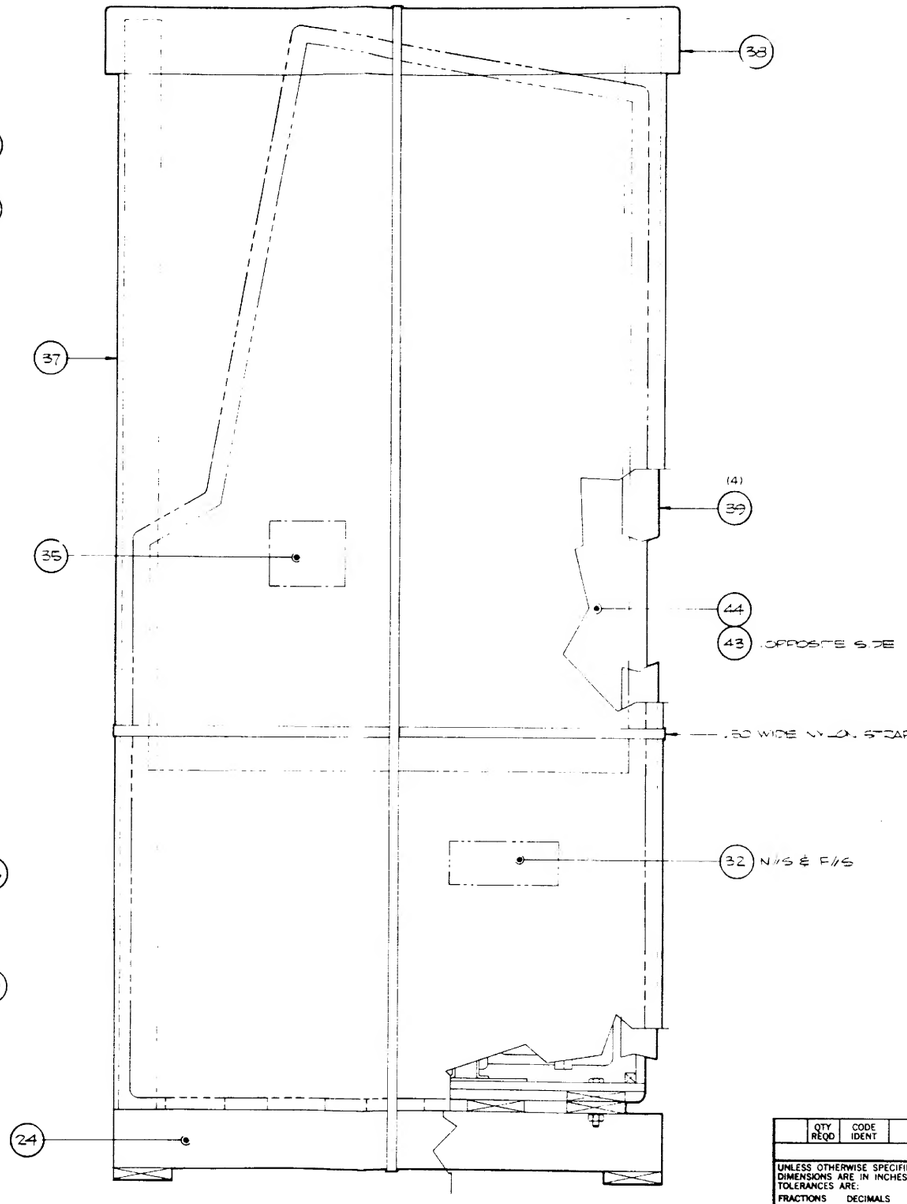
SCALE 1/4 SHEET 7 OF 9

NEXT ASSY | USED ON
APPLICATION

725-0002 A

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | LTR | DESCRIPTION | DATE | APPROVED |
| | A | [illegible] RELEASE | 1-19-79 | |




CONTAINER DETAIL

| QTY REQD | CODE IDENT | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | | | |

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN S. LLOYD | 1-15-79 |
| CHECKED | 1-19-79 |

| NEXT ASSY | USED ON |
|---|---|
| APPLICATION | |

**Gremlin Industries, Inc.**
San Diego, California 92123

TOP ASSEMBLY GEE-BEE

| SIZE | CODE IDENT NO. | DRAWING NO. | REV. |
|---|---|---|---|
| D | | 725-0002 | A |

SCALE 1/4 SHEET 9 OF 9

725-0002 A

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | LTR | DESCRIPTION | DATE | APPROVED |
| | A | INITIAL RELEASE | 1-19-79 | |

LOGIC BOARD // 825-0001

J1 P1

J4 - 10
P2 - 5
P2 - 4
J3 - 12
J3 - 13
J3 - 4
J4 - 9
J4 - 7
J3 - 8
J4 - 3
J4 - 2
J4 - 1
J3 - 2
J3 - 1
J5 - 2
J3 - 14
J5 - 1
J6 - 2
J4 - 4
J4 - 5
J4 - 6
J3 - 6
J3 - 5
P2 - 3
P2 - 2
P1 - 21
J3 - 9
J6 - 1

MAIN HARNESS // 825-0006

HARNESS // 825-0005
COIN ACCEPTOR // 220-0074

J3 P3

P1 - B
P1 - P
P1 - E
P1 - V
P1 - 17
P1 - M
P1 - Z
P1 - E
P1 - S
P1 - 14
GND.

CONTROL PANEL // 825-0002

J4 P4

P1 - R
P1 - N
P1 - T
P1 - 4
P1 - 6
P1 - L
P1 - K
P1 - J
P1 - C
P1 - 14
GND.

CRT MODULE // 200-0004

J5 P5

P1 - S
P1 - R

JUNCTION BOX // 807-0009

JB-A
JB-B
POWER IN
P1 - S
P1 - 3
GND.

LIGHT

DS1

SPEAKER // 130-0001

P6
J6

P1 - 22
P1 - 15

POWER SUPPLY // 825-0007

P2 J2

P1 - 21
P1 - 20
P1 - 19
P1 - 4
P1 - 3

1 JB-A
2
3 JB-B
4

GND.

# CABINET WIRING DIAGRAM

| QTY REQD | CODE IDENT | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | | PARTS LIST | |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS XX ± XXX ± ANGLES ±

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN S. LLOYD | 1-4-79 |
| CHECKED | 1-4-79 |

MATERIAL

FINISH

DO NOT SCALE DRAWING

NEXT ASSY | USED ON
APPLICATION

**Gremlin Industries, Inc.**
San Diego, California 92123

TOP ASSEMBLY GEE-BEE

| SIZE | CODE IDENT NO. | DRAWING NO. | REV |
|---|---|---|---|
| D | | 125-0001 | A |

SCALE NONE | SHEET 3 OF 9

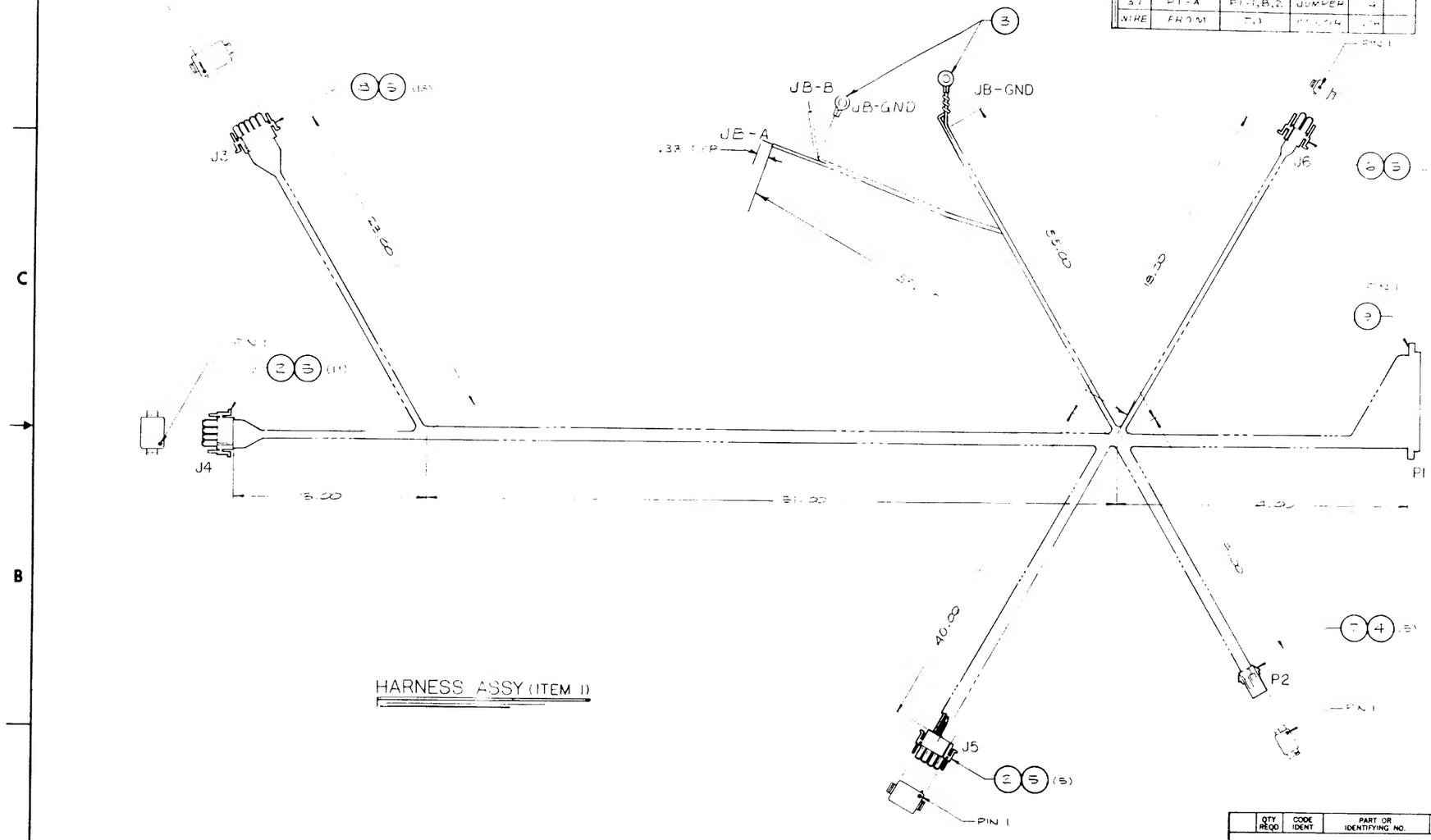
125-0004 A

| ZONE | LTR | REVISIONS DESCRIPTION | DATE |
|---|---|---|---|
| | F | P.C.N. A.E.D. | |

| | | | | |
|---|---|---|---|---|
| 43 | P1-Y | P1-Z | JUMPER | 4 |
| 42 | P1-X | P1-20 | JUMPER | 4 |
| 41 | P1-W | P1-19 | JUMPER | 4 |
| 40 | P1-F | P1-S | JUMPER | 4 |
| 39 | P1-D | P1-4 | JUMPER | 4 |
| 38 | P1-C | P1-3 | JUMPER | 4 |
| 37 | P1-A | P1-1,B,2 | JUMPER | 4 |
| WIRE | FROM | TO | COLOR | IN |

| WIRE | FROM | TO | COLOR | IN |
|---|---|---|---|---|
| 36 | J3-3 | J3-9 | WHT/GRN. | |
| 26 | J3-7 | J3-4 | RED | |
| 21 | J4-10 | J8-GND | GRN. | |
| 32 | J4-5 | J5-GND | GRN | |
| 20 | P1-J | J8-A | BLK | |
| 31 | J5-6 | J8-B | WHT | |
| 30 | J5-7 | J8-GND | GRN. | |
| 28 | P1-22 | J8-1 | BLK | |
| 18 | P1-14 | J8-14 | SHLD. | |
| 27 | P1-Z | J3-9 | WHT/GRN. | |
| 24 | P1-19 | P2-3 | GRY. | |
| 25 | P1-S | P2-5 | BRN. | |
| 24 | P1-4 | P2-4 | ORG. | |
| 23 | P1-V | J3-5 | BLU. | |
| 22 | P1-7 | J3-6 | WHT/BRN | |
| 21 | P1-U | J4-6 | WHT/BLK | |
| 20 | P1-6 | J4-5 | WHT/GRY | |
| 9 | P1-T | J4-4 | WHT/VIO | |
| 8 | P1-15 | J6-2 | LT.BLU | |
| 17 | P1-S | J5-1 | SHLD.CA WHT | |
| 6 | P1-4 | J4-11 | WHT/GRN. | |
| 5 | P1-2 | J5-2 | SHLD. | |
| 4 | P1-B | J3-1 | WHT. | |
| 3 | P1-P | J3-2 | BRN. | |
| 12 | P1-12 | J4-1 | WHT/RED | |
| 11 | P1-N | J4-2 | WHT/ORG | |
| 10 | P1-11 | J4-3 | WHT/BLU | |
| 9 | P1-M | J3-8 | GRY. | |
| 15 | P1-K | J4-7 | PNK | |
| 7 | P1-J | J4-9 | WHT/YEL | |
| 29 | P1-F | J3-4 | RED | |
| 19 | P1-S | J3-13 | SHLD.CA WHT | |
| 31 | P1-E | J3-12 | SHLD.CA BLK | |
| 33 | P1-20 | P2-2 | WHT. | |
| 2 | P1-C | J4-10 | BRN. | |
| 1 | P1-21 | P2-1 | N.C. | |

WIRE LIST




NOTES:
1. SECURE HARNESS USING ITEM 12, APPROX EVERY 6.00 IN. (29 REQ)
2. SHRINK TUBING ON J3 & ON P1.

| QTY REQD | CODE IDENT | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS XX ± XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN | |
| CHECKED | |

Gremlin Industries, Inc
San Diego, California 92123

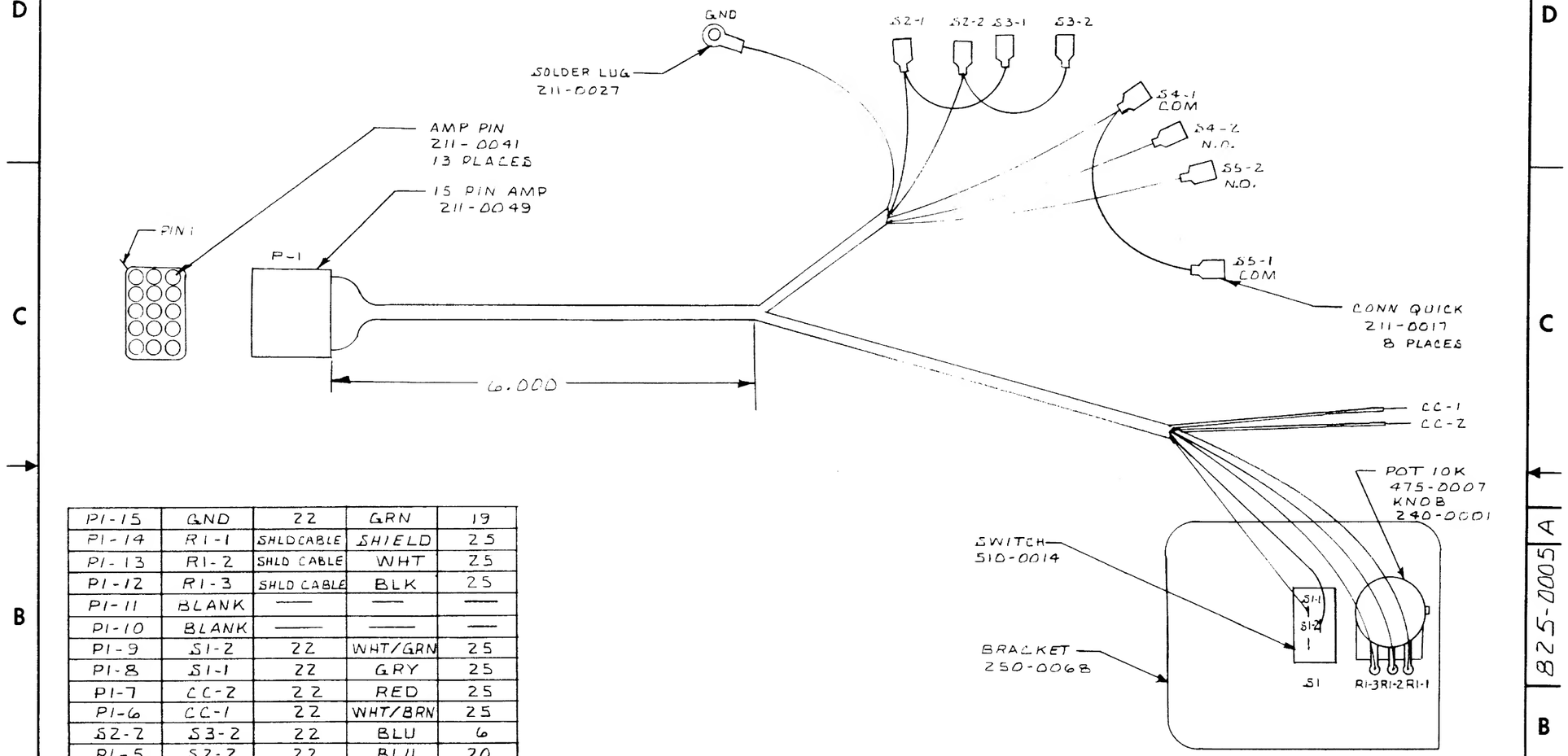
MAIN HARNESS
(SEE - PLES

| SIZE | CODE IDENT NO. | DRAWING NO |
|---|---|---|
| D | | 825-0006 |

SCALE NONE SHEET 1

| NEXT ASSY | USED ON |
|---|---|
| APPLICATION | |

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | LTR | DESCRIPTION | DATE | APPROVED |
| | A | RELEASED WJB | 1-22-79 | |




| | | | | |
|---|---|---|---|---|
| P1-15 | GND | 22 | GRN | 19 |
| P1-14 | R1-1 | SHLDCABLE | SHIELD | 25 |
| P1-13 | R1-2 | SHLD CABLE | WHT | 25 |
| P1-12 | R1-3 | SHLD CABLE | BLK | 25 |
| P1-11 | BLANK | — | — | — |
| P1-10 | BLANK | — | — | — |
| P1-9 | S1-2 | 22 | WHT/GRN | 25 |
| P1-8 | S1-1 | 22 | GRY | 25 |
| P1-7 | CC-2 | 22 | RED | 25 |
| P1-6 | CC-1 | 22 | WHT/BRN | 25 |
| S2-2 | S3-2 | 22 | BLU | 6 |
| P1-5 | S2-2 | 22 | BLU | 20 |
| S2-1 | S3-1 | 22 | RED | 6 |
| P1-4 | S2-1 | 22 | RED | 20 |
| S4-1 | S5-1 | 22 | WHT/GRN | 6 |
| P1-3 | S4-1 | 22 | WHT/GRN | 23 |
| P1-2 | S5-2 | 22 | BRN | 26 |
| P1-1 | S4-2 | 22 | WHT | 23 |
| FROM | TO | AWG | COLOR | INCH |

2. CABLE TIES 280-0005 APPRO. 6" APART
1. STRIP WIRES BACK 1/4"

NOTES:

| QTY REQD | CODE IDENT | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|

PARTS LIST

| | |
|---|---|
| 725-0002 | |
| NEXT ASSY | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN Wynema | 1-19-79 |
| CHECKED Steve Fay | 1-22-79 |

**Gremlin Industries, Inc.**
San Diego, California 92123

ASSEMBLY—
HARN COIN MECH

| SIZE | CODE IDENT NO. | DRAWING NO. | REV |
|---|---|---|---|
| C | | 825-0005 | A |

SCALE NONE SHEET 1 OF 1

825-0005 A

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | LTR | DESCRIPTION | DATE | APPROVED |
| | | | | |

SOUND

NOISE

BALL ON

| QTY REQD | CODE IDENT | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|
| | | | PARTS LIST |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± | DECIMALS .XX ± .XXX ± | ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN | 12-31-79 |
| CHECKED | 1-10-80 |

**Gremlin Industries, Inc.**
San Diego, California 92138

SCHEMATIC —
GB VIDEO LOGIC

| SIZE | CODE IDENT NO. | DRAWING NO. | REV |
|---|---|---|---|
| D | | 825-0001 | A |

SCALE NONE — SHEET 3 OF 3

| 725-0001 | GEE BEE |
|---|---|
| NEXT ASSY | USED ON |
| APPLICATION | |

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | LTR | DESCRIPTION | DATE | APPROVED |
| | A | RELEASED | | |

NOTES:
1. ALL 74 SERIES ARE LS.

| PARTS LIST | | | |
|---|---|---|---|
| QTY REQD | CODE IDENT | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± .XX ± DECIMALS ± .XXX ± ANGLES ±
MATERIAL
FINISH
DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN | 3-6-78 |
| CHECKED | 3-16-78 |

Cromemco Industries, Inc.
San Diego, California 92128

SCHEMATIC — GB VIDEO LOGIC

| SIZE | CODE IDENT NO. | DRAWING NO. | REV |
|---|---|---|---|
| D | | 825-0001 | A |

SCALE NONE | SHEET 1 OF 1

| 725-0001 | LEE BEE |
|---|---|
| NEXT ASSY | USED ON |
| APPLICATION | |

| REVISIONS | | | | |
|---|---|---|---|---|
| ZONE | LTR | DESCRIPTION | DATE | APPROVED |
| | | [illegible] | 1-10-79 | |

| QTY REQD | CODE IDENT | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION |
|---|---|---|---|

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN [illegible] | 12-5-78 |
| CHECKED [illegible] | 1-10-79 |

**Cromlin Industries, Inc.**
San Diego, California 92138

SCHEMATIC —
G B VIDEO LOGIC

| SIZE | CODE IDENT NO. | DRAWING NO. | REV |
|---|---|---|---|
| D | | 825-0001 | A |

SCALE NONE — SHEET 8 OF 9

| 825-0001 | GEE BEE |
|---|---|
| RESET ASSY | USED ON |

APPLICATION

825-0001 A

| Gramlin Industries, Inc. San Diego, California 92123 | PARTS LIST | TITLE ASSY VIDEO LOGIC G.B | 825-0001 DWG NO | SH 2 OF 9 | A REV |
|---|---|---|---|---|---|

| ITEM NO | PART NO | QTY PER ASSY | DESCRIPTION | REF DES |
|---|---|---|---|---|
| 1 | 150-0001 | 3 | CAP E 22µf 35V | C20, C28, C35 |
| 2 | 150-0004 | 9 | CAP E 10µf 10V | C19, C27, C31, C36, C39, |
| | | | | C45, C47, C49, C59 |
| 3 | 150-0005 | 1 | CAP E 4700µf 16V | C85 |
| 4 | 150-0008 | 1 | CAP E 2200µf 16V | C63 |
| 5 | 150-0012 | 2 | CAP E 47µf 10V | C62, C67 |
| 6 | 150-0017 | 2 | CAP E 35µf 25V | C1, C11 |
| 7 | 150-0031 | 1 | CAP E 470µf 16V | C80 |
| 8 | 150-0032 | 1 | CAP E 220µf 10V | C52 |
| 9 | 150-0033 | 1 | CAP E 1000µf 25V | C64 |
| 10 | 151-0002 | 1 | CAP CER 100pf 50V | C94 |
| 11 | 151-0008 | 1 | CAP CER .001µf 50V | C84 |
| 12 | 151-0011 | 13 | CAP CER .01µf 50V | C22-26, 29, 42, 55, 56, 81, 82, 88 |
| 13 | 151-0012 | 2 | CAP CER .1µf 50V | C60, C61 |
| 14 | 151-0013 | 1 | CAP CER 10pf 50V | C18 |
| 15 | 151-0017 | 43 | CAP CER .1µf 12V | C3-C9, C10, C12-C16, C21, C30, |
| | | | | C32-C34, C37, C38, C40, |
| | | | | C41, C43, C44, C46, C48, |
| | | | | C50, C51, C53, C54, C66, |
| | | | | C72, C73, C76-C79, C86, |
| | | | | C87, C89, C91-C93 |
| 16 | 153-0001 | 1 | CAP TANT 10µf 10V | C17 |
| 17 | 153-0002 | 3 | CAP TANT 1µf 25V | C33, C57, C65 |
| 18 | 153-0003 | 1 | CAP TANT 2.2µf 25V | C58 |
| | | | | |

| Gremlin Industries, Inc. San Diego, California 92126 | PARTS LIST | TITLE ASSY VIDEO LOGIC G.B. | 825-0001 DWG NO | SH 3 OF 9 | A REV |
|---|---|---|---|---|---|

| ITEM NO | PART NO | QTY PER ASSY | DESCRIPTION | REF DES |
|---|---|---|---|---|
| 19 | 170-0157 | 1 | PCB VID LOG G.B. | |
| | | | | |
| 20 | 211-0004 | 2 | CONN PIN TEST PT | E1, E2 |
| 21 | 213-0001 | 6 | SKT 24 PIN DUAL INLN | X1K, X3A, X1M, X1P, X1S, X1T |
| 22 | 213-0005 | 1 | SKT 40 PIN DUAL INLN | X1F |
| | | | | |
| 23 | 230-0023 | 1 | XTAL 18.432 MHZ | CY |
| | | | | |
| 24 | 313-0002 | 1 | IC LM311C | 6M |
| 25 | 313-0003 | 1 | IC 7805 | 1R3 |
| 26 | 313-0006 | 1 | IC LM380 | 5K |
| 27 | 313-0014 | 1 | IC 7812 | 1R1 |
| 28 | 313-0023 | 1 | IC 7905C | 1R2 |
| 29 | 314-0001 | 1 | IC NE555 | 5L |
| 30 | 314-0019 | 1 | IC 74LS04 | 4P |
| 31 | 314-0058 | 2 | IC 74LS08 | 3M 4U |
| 32 | 314-0059 | 2 | IC 74LS10 | 3V 4H |
| 33 | 314-0061 | 2 | IC 74LS42 | 2V, 2T |
| 34 | 314-0062 | 4 | IC 74LS74 | 4E, 4F, 4N, 4T |
| 35 | 314-0064 | 1 | IC 74LS153 | 2M |
| 36 | 314-0067 | 1 | IC 74LS30 | 3N |
| 37 | 314-0068 | 2 | IC 74LS32 | 2U, 3U |
| 38 | 314-0070 | 4 | IC 74LS86 | 4J, 4K, 4L, 4M |
| 39 | 314-0071 | 1 | IC 74LS151 | 4R |
| 40 | 314-0073 | 1 | IC 74LS175 | 4S |

| Gremlin Industries, Inc. San Diego, California 92123 | PARTS LIST | TITLE ASSY VIDEO LOGIC G.B. | 825-0001 DWG NO | SH 4 OF 9 | A REV |
|---|---|---|---|---|---|

| ITEM NO | PART NO | QTY PER ASSY | DESCRIPTION | REF DES |
|---|---|---|---|---|
| 41 | 314-0075 | 2 | IC 74LS393 | 3J,3K |
| 42 | 314-0076 | 6 | IC 74LS157 | 2A,2D,2E,2J,2K,2L |
| 43 | 314-0078 | 2 | IC 74LS02 | 3W 4D |
| 44 | 314-0087 | 1 | IC 74LS139 | 5M |
| 45 | 314-0093 | 1 | IC 74LS374 | 4B |
| 46 | 314-0094 | 1 | IC 74LS259 | 5N |
| 47 | 314-0095 | 1 | IC 8224 | 1C |
| 48 | 314-0096 | 1 | IC 74LS92 | 3L |
| 49 | 314-0097 | 2 | IC 74LS161 | 3S,3T |
| 50 | 314-0098 | 2 | IC 74LS194 | 2B,2C |
| 51 | 314-0099 | 1 | IC 74LS245 | 3E |
| 52 | 314-0100 | 2 | IC 74LS273 | 2R,2S |
| 53 | 314-0101 | 2 | IC 74LS283 | 3P 3R |
| 54 | 314-0102 | 6 | IC 74LS367 | 2N,2P,3C,3D,5D,5F |
| 55 | 314-0103 | 2 | IC 74LS368 | 5B,5C |
| 56 | 315-0014 | 1 | IC 8080 | 1F |
| 57 | 315-0018 | 2 | IC 2111 | 1V,1W |
| 58 | 315-0019 | 1 | IC 2708 | 3A |
| 59 | 315-0045 | 1 | IC CD4066 | 6N |
| 60 | 315-0046 | 2 | IC 2114/2114L RAM | 3F,3H |
| | | | | |
| 61 | 470-0102 | 18 | RES 1K OHM 1/4W 5% | R2-4,6-8,27-29,35,53,65 |
| 62 | 470-0103 | 2 | RES 10K OHM 1/4W 5% | R24,R55 |
| 63 | 470-0104 | 1 | RES 100K OHM 1/4W 5% | R49 |
| 64 | 470-0223 | 11 | RES 22K OHM 1/4W 5% | R1,R9-R16,R30 R50 |

| Gramlin Industries, Inc. San Diego, California 92123 | PARTS LIST | TITLE ASSY VIDEO LOGIC G.B. | 825-0001 DWG NO | SH 5 OF 9 | A REV |
|---|---|---|---|---|---|

| ITEM NO | PART NO | QTY PER ASSY | DESCRIPTION | REF DES |
|---|---|---|---|---|
| 65 | 470-02R7 | 1 | RES 2.7 OHM 1/4W 5% | R17 |
| 66 | 470-0332 | 1 | RES 3.3K OHM 1/4W 5% | R31 |
| 67 | 470-0331 | 2 | RES 330 OHM 1/4W 5% | R25, R26 |
| 68 | 470-0152 | 2 | RES 1.5K OHM 1/4W 5% | R33, R34 |
| 69 | 470-0471 | 12 | RES 470 OHM 1/4W 5% | R43-R48, R36, |
| | | | | R56-R58, R60, R61 |
| 70 | 470-0472 | 6 | RES 4.7K OHM 1/4W 5% | R18-R23 |
| 71 | 470-0474 | 1 | RES 470K OHM 1/4W 5% | R51 |
| 72 | 470-0912 | 1 | RES 9.1K OHM 1/4W 5% | R52 |
| | | | | |
| 73 | 481-0001 | 10 | DIODE IN4002 | D2-D5, D11-D14, D16, D17 |
| | | | | |
| 74 | 481-0006 | 6 | DIODE IN914/IN4148 | D1, D6-D10 |
| | | | | |
| 75 | 482-0009 | 3 | XSTR 2N5060 | Q3-Q5 |
| 76 | 482-0014 | 3 | XSTR 2N4401 | Q1 Q2 Q6 |
| | | | | |
| 77 | 510-0043 | 1 | SWITCH 6 POS DIP | SW2 |
| 78 | 530-0008 | 1 | HEAT SINK | |
| | | | | |
| 79 | 470-0105 | 1 | RES 1M OHM 1/4W 5% | R54 |
| 80 | 470-0101 | 1 | RES 100 OHM 1/4W 5% | R62 |
| 81 | 470-0682 | 1 | RES 680 OHM 1/4W 5% | R32 |
| 82 | 316-0137 | 1 | IC PROM 2332 G.B. | 1K |
| | | | | |